MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 1, 2019/2020

EME4196 –QUALITY ENGINEERING

(ME/ TE / RE)

16 OCTOBER 2019
9.00 a.m. - 11.00 a.m.
(2 Hours)

INSTRUCTIONS TO STUDENT

1. This question paper consists of 3 pages including the cover page with 4 Questions only.

2. Attempt **ALL** questions . All questions carry equal marks and the distribution of the marks for each question is given .

3. Please write all your answers in the Answer Booklet provided .

Question 1

a) Total Quality Management is an extensive and structured organization management approach that focuses on continuous quality improvement of products and services by using continuous feedback. Discuss the SIX basic concepts of TQM.

[12 marks]

b) ISO 9000 is defined as a set of international standards on quality management and quality assurance developed to help companies effectively document the quality system elements needed to maintain an efficient quality system. List out the EIGHT principles of ISO9000.

[8 marks]

c) Six Sigma is a set of management techniques intended to improve business processes by greatly reducing the probability that an error or defect will occur. What are the FOUR areas that Six Sigma are emphasize in?

[5 marks]

Question 2

a) ISO 14001:2015 specifies the requirements for an environmental management system that an organization can use to enhance its environmental performance. It is intended for use by an organization seeking to manage its environmental responsibilities in a systematic manner that contributes to the environmental pillar of sustainability. List out SIX potential organization benefits from this ISO.

[12 marks]

b) The importance of top management commitment and support to introduce Quality Management in an organization cannot be underestimated or ignored.
Explain the FOUR possible reasons top management do not commit to efforts to introduce and implement Quality Management.

[8 marks]

c) Computers perform operations at fast speeds with an exceptionally high degree of accuracy. List out FIVE quality functions that can be served by computers in a computerized quality control system.

[5 marks]

Continued ...

Question 3

a) The quantitative tools used in TQM are important in analyzing the collected data for better interpretation of the information. Using suitable engineering examples, discuss the different possible applications of the Check Sheet, Pareto chart and Cause-Effect Diagram in an engineering firm.

[15 marks]

b) Discuss the advantages of the Sampling technique compared to the 100% Inspection method. Relate your answers to a manufacturing company producing automobile parts.

[10 marks]

Question 4

a) Assume you have to explain to the top management of your company, HONDA, the potential applications and benefits of Analysis of Variance (ANOVA) and Failure Mode and Effect Analysis (FMEA) are advanced tools. Explain in detail about these 2 important tools in terms of the concepts and the advantages of using these methods.

[16marks]

b) Reliability can be described as quality over the long run. The 3 important aspects of reliability are the factors of design, production process and transportation of the product to the customer. Discuss the importance of these 3 aspects in ensuring reliability in engineering industry.

[9 marks]

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